The World Ender: Developing an Engaging Inquiry-Based Curriculum for Understanding Small Bodies. C. Runyon C. [1], Hall[1], C.[1], R. Nettles[2], and J. Minafra[3], [1]College of Charleston, Charleston, SC runyonc@cofc.edu, hallcr@cofc.edu ; [2]S[2]TEM Centers SC, Charleston, SC rnettles@s2temsc.org; [3]NASA SSERVI, NASA Ames Research Center joseph.minafra@nasa.gov.

Introduction: Over the past four years, two SSERVI Education/Public Engagement (EPE) teams have been actively involved in the development of a creative approach, integrating the 21st century competencies, to delivering NASA asteroid and small bodies content to a large formal and informal education audience, including those with special needs. Our EPE program and activities being developed with SEEED at Brown/MIT and CLASS at University of Central Florida promote science, technology, engineering, arts, mathematics (STEAM) literacy using the excitement generated from the success of recent exploration missions and the SSERVI team research. The World Ender Problem-Based Learning (PBL) Unit incorporates applied learning theory, where students are directly involved in the application of skills and models, that revolve around a real-world issue, that of an asteroid approaching the Earth. The curriculum integrates an interdisciplinary approach, incorporating not only Earth and Space Sciences, but also Math, Engineering, the Arts, Humanities, and English/Language Arts. According to The National Council for Teachers of English (NCTE 1995) "educational experiences are more authentic and of greater value to students when the curricula reflects real life, which is multi-faceted rather than being compartmentalized into neat subject-matter packages." No one single discipline can mimic complex real-world issues; all issues transcend disciplines. As such, The World Ender curriculum teaches outside of the discipline silos, instead interweaving the disciplines throughout the content, simulating the real world.

Curriculum: Through *The World Ender* PBL, students investigate collisions and research impact events, asteroids, regolith, and meteorites. As they investigate collisions they read about historic impact events and redirecting and mining asteroids. They conduct a plethora of data collection activities to assess how sensors are used to acquire scientific data from asteroids and other planetary bodies. For example, the students use a radar sensor to detect the topography and a spectrometer to determine the mineral composition of a given simulated planetary surface. Integrating all of the data points, students can determine potential areas of interest on the small body. Further, they play games to solve Newton's Law problems. Once students have grasped Newton's 1st and 2nd Laws, they explore Earth's gravity, relative size and distance and research space, orbits and galaxies before building a model that will inform their team's solution to redirecting the *"World Ender"* asteroid. Extension activities incorporated into the storyline guide the students should they choose to mine the asteroid before redirecting it. The collection of activities ensures student understanding of the difference(s) between properties and changes, both physical and chemical, and provide extensive exploration of density and magnetism.

Evaluation: Through the 2017-2018 academic year, several teachers around the country have implemented The World Ender Curriculum in their classroom. Our poster will showcase the initial impressions from the teachers - their excitement about incorporating authentic NASA data into the classroom and their view of teaching in a more interdisciplinary manner.